

FIG. 1

PRIOR ART

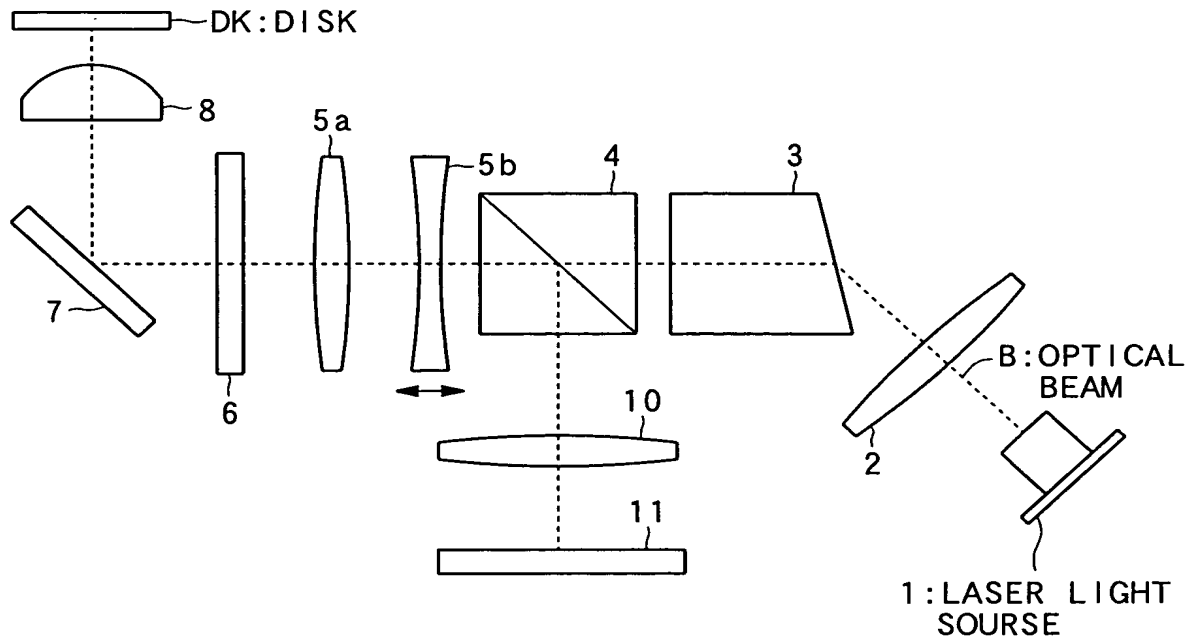


FIG. 2  
PRIOR ART

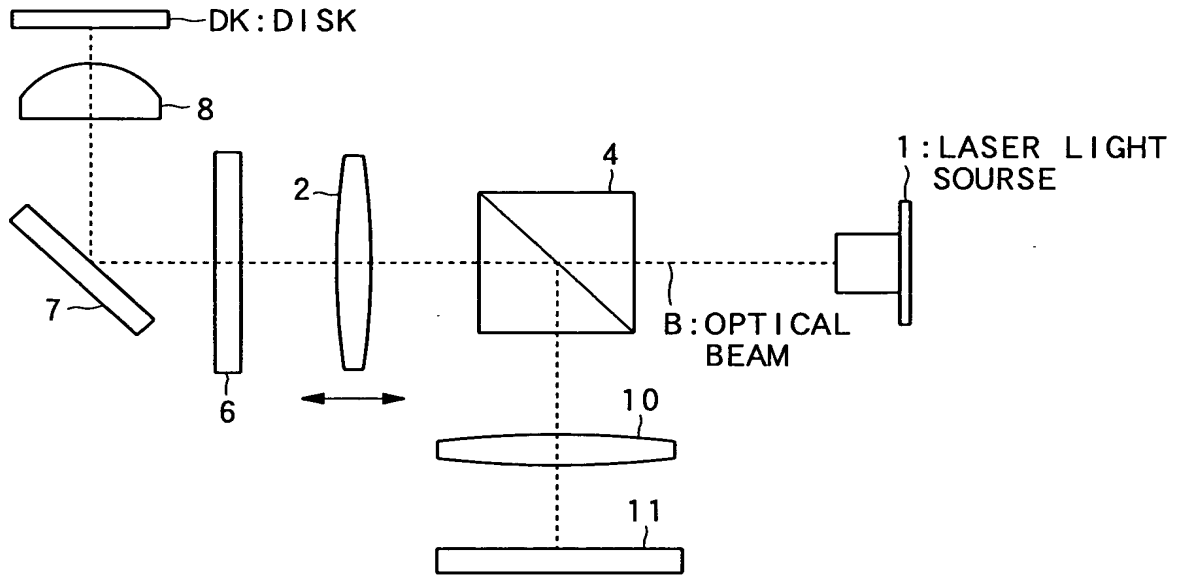
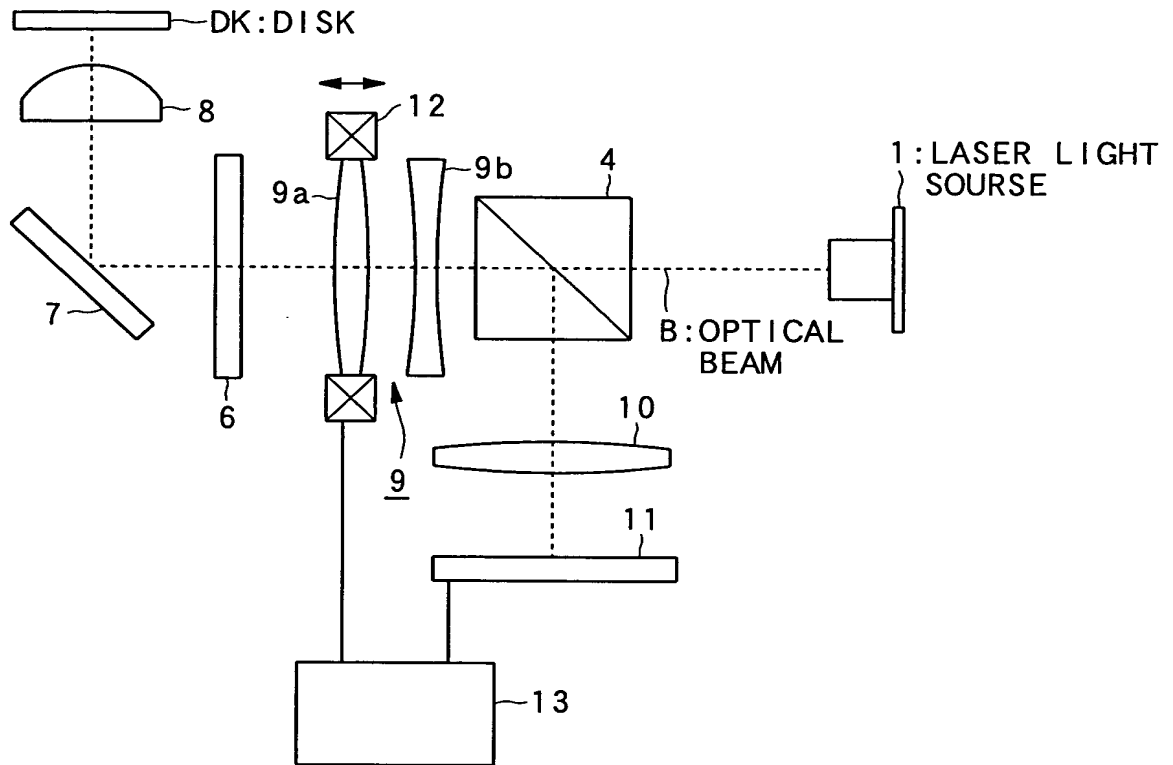
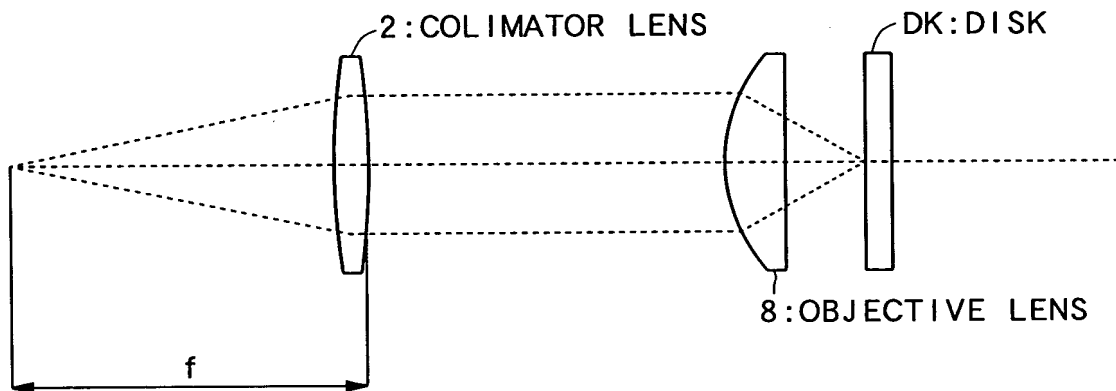


FIG. 3



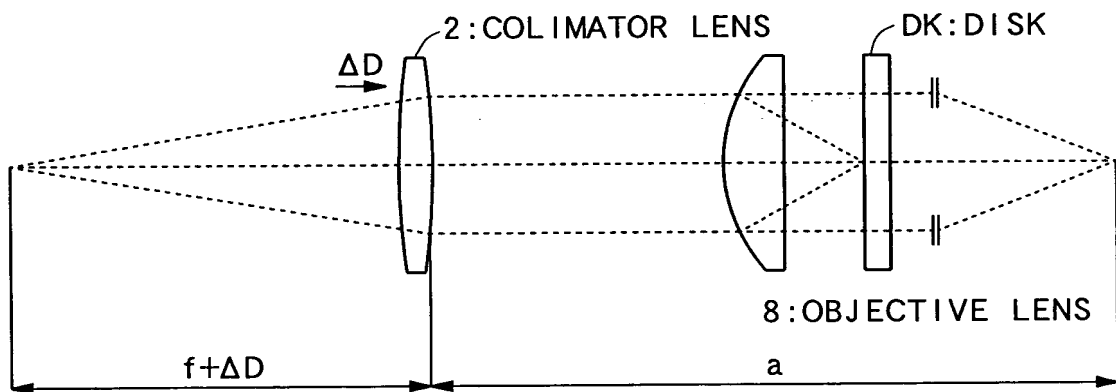
# FIG. 4A

A [WITHOT CORRECTION FOR SPHERICAL ABERRATION]



# FIG. 4B

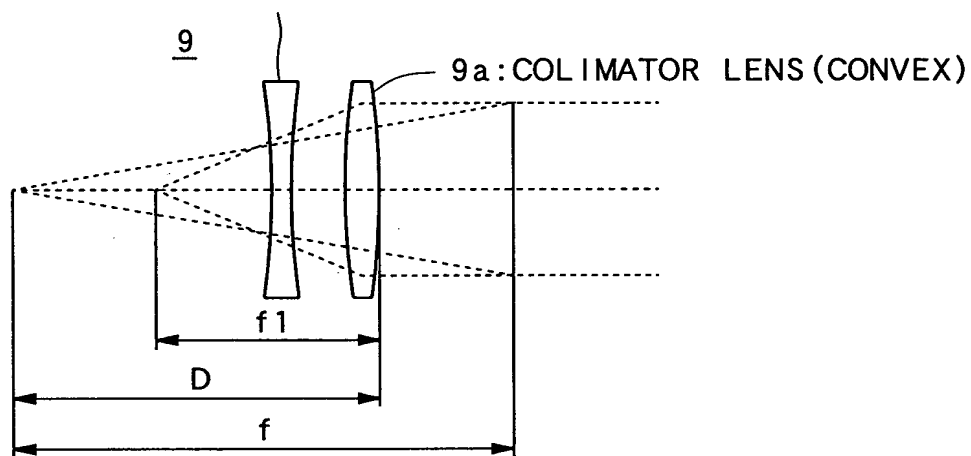
B [WITH CORRECTION FOR SPHERICAL ABERRATION]



# FIG. 5A

A [WITHOT CORRECTION FOR SPHERICAL ABERRATION]

9b: COLIMATOR LENS (CONCAVE)



# FIG. 5B

B [WITH CORRECTION FOR SPHERICAL ABERRATION]

9b: COLIMATOR LENS (CONCAVE)

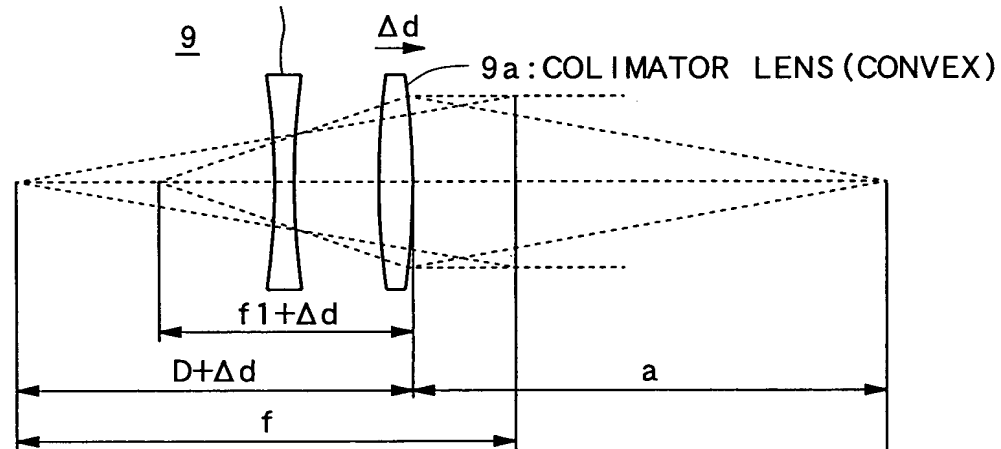
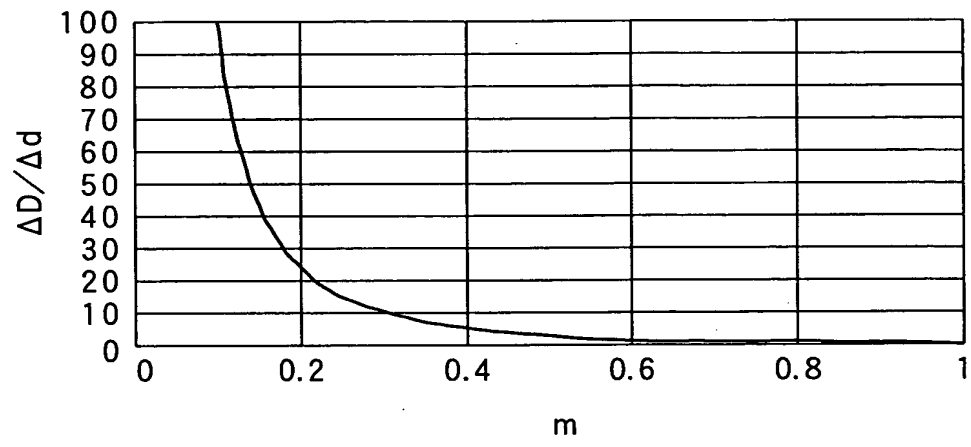


FIG. 6



## FIG. 7 A

{CORRECTION USING COLIMATOR (CONVENTIONAL)}

THICKNESS OF COVER LAYER (um)	SPHERICAL ABERRATION AMOUNT AFTER CORRECTION (mλ)	STROKE (mm)	THICKNESS ERROR (um)
70	0.04306	4	-30
76	0.033751	3.15	-24
82	0.025283	2.25	-18
88	0.0168	1.45	-12
94	0.00841	0.7	-6
100	0.001044	0	0
106	0.00849	-0.65	6
112	0.016795	-1.3	12
118	0.025073	-1.9	18
124	0.033209	-2.45	24
130	0.04141	-3	30

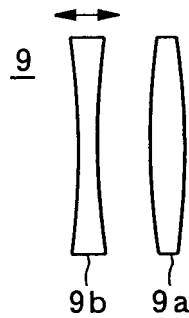
## FIG. 7 B

{CORRECTION BASED ON INTERVALS OF LENS IN COLIMATOR CONFIGURATION}

THICKNESS OF COVER LAYER (um)	SPHERICAL ABERRATION AMOUNT AFTER CORRECTION (mλ)	STROKE (mm)	THICKNESS ERROR (um)
70	0.041553	-0.65	-30
76	0.032863	-0.525	-24
82	0.024919	-0.375	-18
88	0.01631	-0.25	-12
94	0.008101	-0.125	-6
100	0.001044	0	0
106	0.008257	0.125	6
112	0.016574	0.25	12
118	0.024364	0.35	18
124	0.031743	0.475	24
130	0.040057	0.6	30

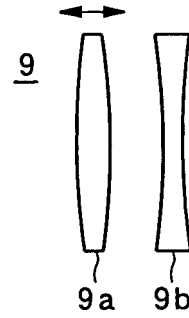
# FIG. 8A

[CONCAVE LENS IS MOVED.]



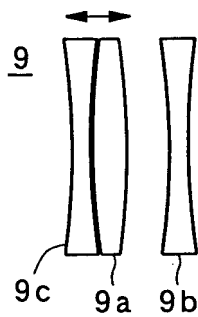
# FIG. 8B

[LAYOUT OF LENSES IS CHANGED.]



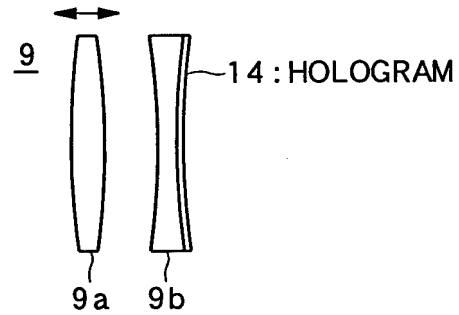
# FIG. 8C

[COMPOSITE LENS IS USED.]



# FIG. 8D

[HOLOGRAM IS  
ADDITIONALLY FORMED.]



# FIG. 9

## EXAMPELES OF LENS DATA

SURFACE	CURVATURE RADIUS	THICKNESS	LENS APERTURE	MATERIAL
OBJ	—	1.00E+23	2.62E+20	AIR
AST	6.805881 V	1.5	2.000000 A	O_S—BSL7
2	-17.6173 V	1.2	2	O_S—FTM1
3	-14.5837 V	2	1.432499	AIR
4	-6.46363 V	1.2	2	O_S—FTM1
5	51.27549 V	—	2	AIR
6	—	4.997936	2	AIR
7	—	4	2	O_S—BSL7
8	—	1	1.5	AIR
9	—	0.5	1.5	O_S—BSL7
10	—	1	1.5	AIR
11	—	6	1.5	O_S—BSL7
12	—	1.08658	1.5	AIR
13	—	0.25	1.5	O_S—BSL7
14	—	0.25	0.084568 S	AIR
IMS	—	—	3	